	10				30						50			
TCACT	CATTGT	GAAA	GCTGA	GCTCA	CAGCCC	AATA	AGC(CAC(CATO	GAG	GCTG	TCA	GTC	STGT
									M	R			٧	
	70				90						110			
CTCCT	GATGGT	CTCG	CTGGC	CCTTT	GCTGC	TACCA	CGC	CCA	TGC	TÇT	TGTC	TGC	CCCA	IGCT
L L	M V	S	L A	Ĺ (C	(Q	Α	Н	Α	L			Р	
	130				150						170			
GTTGC	TTCTGA	GATC	ACAGT	CTTCI	TATTC	TAAG	TGA	CCC.	TGC	GGT	AAAC	CTO	CAA	AGTT
V A	S E	_		FL			D						Q	
•	190	•			210						230			
CCCAA	ACTTAA	TCCA	CCTCC	CAGAAC		GCAGC	CAA	GTT	GGA	4GT	GAAG	CAC	CTGC	CACC
			P P		A L					٧		Н	С	T
Λ Ι	250	•	• •		270	• ••		_	_	-	290			
CATCA	GATATC	TTTT	ΔΔΩΔΔ	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		TTGGA	ΔΔΔ	ACT	CCT			ATA	AGT(SAAA
0 0	IS				S								V	
ט ע	310	1	IX IX	11 1	330		1	•	_		350	•	•	••
AAATO	TGGTGT	CTCA	CATCI			ለ ለሶሶገ	CCT	TTC	۲ΔΔ			$C\Delta$	ACG/	ACAC
		GIGA	CAIG	MANA	410010	MACCI	I OO I	110		10 1	0111	0, 0	1001	10710
K C	G V 370				390						410			
COTO	J/U ATCTTCA	OT.A.A		TOTAA.	UEC	$\sim \lambda \Lambda C I$	\CCT	ፐርር	TTT	۸۸Τ		.ر.۷٥	TT(3000
CCIGA		IC I AP	VAAAT	IGIAA	400111	UHHU	1001	100	111	/V/\ i		Uni	J 1 1 (,000
TOOLO	430			Г		4								
IGCAC	CATCAAA	NAA		I	IG.	1				•				•
	10				30						50			
TIGTI	10 TGTGAA	AGCT	GAGC	rcaca(CCAC			GCT	GTCC			
TTGTT		AGCT	GAGC	[CACA(CAAAA	CAAG(CCAC	CAT	GAA K	GCT L	GTC0 S		GTG [*] C	
	TGTGAA				GCAAAA 90	CAAG(M	. K	L	GTCC S 110	٧	С	Ĺ
	TGTGAA				GCAAAA 90	CAAG(CAGG(CCAA	M TGC	K CGA	L GTI	GTCG S 110 CTGG	V CCC	C AGC	Ĺ
	TGTGAA 70 IGGTCAC	CCTC		TCTGC	GCAAAA 90 TGCTAC	CAAG(CCAA	M	K CGA	L	GTCC S 110 CTGC C	٧	С	Ĺ
CTGC1	70 IGGTCAC V T 130	CGCTC L	GCCC ⁷ A L	TCTGC C	90 TGCTAC C Y	CAAG(CAGG(Q A	CCAA N	M TGC A	K CGA E	L GTT F	GTCG S 110 CTGG C 170	V CCC P	C AGC A	L TCTT L
CTGC1	TGTGAA 70 IGGTCAC V T	CGCTC L	GCCC ⁷ A L	TCTGC C	90 TGCTAC C Y	CAAG(CAGG(Q A	CCAA N AACC	M TGC A	K CGA E GTT	L GTT F	GTCG S 110 CTGG C 170	V CCC P NAG	C AGC A TCT	TCTT L TGCC
CTGC1	70 IGGTCAC V T 130 CTGAGCT	CGCTC L	GCCCT A L	TCTGC C	GCAAAA 90 TGCTAC C Y 150 TTCATT	CAAG(CAGG(Q A	CCAA N AACC	M TGC A	K CGA E GTT	L GTT F	GTCG S 110 CCTGG C 170 AGTTA	V CCC P NAG	C AGC A	TCTT L TGCC
CTGCT L L GTTTC V S	TGTGAA 70 TGGTCAC V T 130 CTGAGCT E L 190	CGCTO L TGTTA L	GGCCC [*] A L AGACT [*] D F	ICTGC C C ICTTC F	90 TGCTAC C Y 150 TTCATT F I 210	CAAG(CAGG(Q A AGTG/ S E	CCAA N N AACC	M A A CTCT L	K CGA E GTT F	CAA	GTC0 S 110 CTG0 C 170 AGTT/ L 230	V CCC P AAG S	C AGC A TCT L	TCTT L TGCC A
CTGCT L L GTTTC V S	70 IGGTCAC V T 130 CTGAGCT	CGCTO L TGTTA L	GGCCC [*] A L AGACT [*] D F	ICTGC C C ICTTC F	GCAAAA 90 TGCTAC C Y 150 TTCATT F I 210 GTTGCA	CAAG(CAGG(Q A AGTG/ S E	CCAA N AACC P	M A TCT L	CGA E GTT F	CAA K	GTCG S 110 CCTGG 170 AGTTA L 230 AGAGA	V CCC P AAG S	C AGC A TCT L	TCTT L TGCC A
CTGCT L L GTTTC V S	TGTGAA 70 TGGTCAC V T 130 CTGAGCT E L 190	CGCTO L TGTTA L	GGCCCT A L AGACTT D F	ICTGC C C ICTTC F	GCAAAA 90 TGCTAC C Y 150 TTCATT F I 210 GTTGCA	CAAG(CAGG(Q A AGTG/ S E	CCAA N AACC P	M A TCT L	CGA E GTT F	CAA K	GTCG S 110 CTGG C 170 AGTTA L 230 AGAGA	V CCC P AAG S	C AGC A TCT L	TCTT L TGCC A
CTGCT L L GTTTC V S AAATT K F	70 IGGTCAC V T 130 CTGAGC1 E L 190 ITGATGC D A 250	CGCTO L TGTTA L CCCCT	GGCCCTAL AGACTT DF	TCTGC C TCTTC F AAGCT	90 TGCTAC C Y 150 TTCATT F I 210 GTTGCA V A 270	CAAGO CAGGO Q A AGTG/ S E GCCA/ A K	CCAA N AACC P AGTT L	M A CTCT L AGG	K CGA E GTT F AGT V	CAA K GAA K	GTCG S 110 CTGG C 170 AGTTA L 230 AGAGA R 290	V CCCA P NAG S ATG C	C AGC TCT L CAC	TCTT L TGCC A GGAT D
CTGCT L L GTTTC V S AAATT K F	70 IGGTCAC V T 130 CTGAGC1 E L 190 ITGATGC D A	CGCTO L TGTTA L CCCCT	GGCCCTAL AGACTT DF	TCTGC C TCTTC F AAGCT	90 TGCTAC C Y 150 TTCATT F I 210 GTTGCA V A 270	CAAGO CAGGO Q A AGTG/ S E GCCA/ A K	CCAA N AACC P AGTT L	M A CTCT L AGG	K CGA E GTT F AGT V	CAA K GAA K	GTCG S 110 CTGG C 170 AGTTA L 230 AGAGA R 290	V CCCA P NAG S ATG C	C AGC TCT L CAC	TCTT L TGCC A GGAT D
CTGCT L L GTTTC V S AAATT K F	TGTGAA 70 TGGTCAC V T 130 CTGAGCT E L 190 TTGATGC D A 250 TGTCCCT	CGCTO L TGTTA L CCCCT	GGCCCT A L AGACT D F CCCGGA P E	TCTGC C TCTTC F AAGCT	GCAAAA 90 IGCTAC 150 ITCATT F I 210 GTTGCA V A 270 CTCATT	CAAGO CAGGO Q A AGTG/ S E GCCA/ A K	CCAA N AACC P AGTT L	M TGC A TCT L TAGG G	K CGA E GTT F AGT V	CAA K GAA K	GTCG S 110 CTGG C 170 AGTTA L 230 AGAGA R 290	V CCCA P NAG S ATG C	C AGC TCT L CAC	TCTT L TGCC A GGAT D
CTGCT L L GTTTC V S AAATT K F CAGAT Q M	70 IGGTCAC V T 130 CTGAGCT E L 190 ITGATGC D A 250 IGTCCCT S L	CGCTO L TGTTA L CCCCT P	GGCCCTAL AGACT DF CCCGGA PE GAAACG KR	TCTGC C C TCTTC F AAGCTO A GAAGCO S	90 TGCTAC TTCATT F I 210 GTTGCA V A 270 CTCATT L I 330	CAAGO CAGGO Q A AGTG/ S E GCCA A K GCGG/ A E	CCAA N AACC P AGTT L	M TGC A ETCT L TAGG G	CGA E GTT F AGT V	CAAA K GAA K	GTCG S 110 CTGG C 170 AGTTA L 230 AGAGA R 290 AAATA I 350	V CCCATT	C AGC A TCT L CACC T GAAC	TCTT L TGCC A GGAT D GAAA K
CTGCT L L GTTTC V S AAATT K F CAGAT Q M	70 IGGTCAC V T 130 CTGAGCT E L 190 ITGATGC D A 250 IGTCCCT S L	CGCTO L TGTTA L CCCCT P	GGCCCTAL AGACT DF CCCGGA PE GAAACG KR	TCTGC C C TCTTC F AAGCTO A GAAGCO S	90 TGCTAC TTCATT F I 210 GTTGCA V A 270 CTCATT L I 330	CAAGO CAGGO Q A AGTG/ S E GCCA A K GCGG/ A E	CCAA N AACC P AGTT L	M TGC A ETCT L TAGG G	CGA E GTT F AGT V	CAAA K GAA K	GTCG S 110 CTGG C 170 AGTTA L 230 AGAGA R 290 AAATA I 350	V CCCATT	C AGC A TCT L CACC T GAAC	TCTT L TGCC A GGAT D GAAA K
CTGCT L L GTTTC V S AAATT K F CAGAT Q M	70 IGGTCAC V T 130 CIGAGCI E L 190 ITGATGC D A 250 IGTCCCI S L 310 GIGIGIGIC	CGCTO L TGTTA L CCCCT P	GGCCCTAL AGACT DF CCCGGA PE GAAACG KR	TCTGC C C TCTTC F AAGCTO A GAAGCO S	90 TGCTAC TTCATT F I 210 GTTGCA V A 270 CTCATT L I 330	CAAGO CAGGO Q A AGTG/ S E GCCA A K GCGG/ A E	CCAA N AACC P AGTT L	M TGC A ETCT L TAGG G	CGA E GTT F AGT V	CAAA K GAA K	GTCG S 110 CTGG C 170 AGTTA L 230 AGAGA R 290 AAATA I 350	V CCCATT	C AGC A TCT L CACC T GAAC	TCTT L TGCC A GGAT D GAAA K
CTGCT L L GTTTC V S AAATT K F CAGAT Q M TGTAC C S	TGTGAA 70 TGGTCAC V T 130 CTGAGCT E L 190 TTGATGC D A 250 TGTCCCT S L 310 GTGTGTC V 370	CGCTO L TGTTA L CCCCT P TTCAC Q	GGCCCTAL AGACT DF CCCGGA PE GAAACC KR	TCTGC C (TCTTC F (AAGCT A GAAGC S	90 IGCTAC C Y 150 ITCATT F I 210 GTTGCA V A 270 CTCATT L I 330 TTCATC	CAAGO CAGGO Q A AGTGO S E GCCA A K GCGGO A E	CCAA N AACO P AGTT L AAGT V	M TGC A TCT L AGG G TCCT L	CGA E GTT F AGT V GGT V	CAA K GAA K	GTCG S 110 CTGG C 170 AGTTA L 230 AGAGA R 290 AAATA I 350 ITCA	V CCCA P AAG S ATG C ATT L	C AGC' A TCT L CACC T GAA' K	TCTT L TGCC A GGAT D GAAA K
CTGCT L L GTTTC V S AAATT K F CAGAT Q M TGTAC C S	TGTGAA 70 TGGTCAC V T 130 CTGAGCT E L 190 TTGATGC D A 250 TGTCCCT S L 310 GTGTGTC V 370	CGCTO L TGTTA L CCCCT P TTCAC Q	GGCCCTAL AGACT DF CCCGGA PE GAAACC KR	TCTGC C (TCTTC F (AAGCT A GAAGC S	90 IGCTAC C Y 150 ITCATT F I 210 GTTGCA V A 270 CTCATT L I 330 TTCATC	CAAGO CAGGO Q A AGTGO S E GCCA A K GCGGO A E	CCAA N AACO P AGTT L AAGT V	M TGC A TCT L AGG G TCCT L	CGA E GTT F AGT V GGT V	CAA K GAA K	GTCG S 110 CTGG C 170 AGTTA L 230 AGAGA R 290 AAATA I 350 ITCA	V CCCA P AAG S ATG C ATT L	C AGC' A TCT L CACC T GAA' K	TCTT L TGCC A GGAT D GAAA K
CTGCT L L GTTTC V S AAATT K F CAGAT Q M TGTAC C S	TGTGAA 70 TGGTCAC V T 130 TGAGCT E L 190 TTGATGC D A 250 TGTCCCT S L 310 GTGTGTC	CGCTO L TGTTA L CCCCT P TTCAC Q	GGCCCTAL AGACT DF CCCGGA PE GAAACC KR	TCTGC C (TCTTC F (AAGCT A GAAGC S	90 IGCTAC C Y 150 ITCATT F I 210 GTTGCA V A 270 CTCATT L I 330 TTCATC	CAAGO CAGGO Q A AGTGO S E GCCA A K GCGGO A E	CCAA N AACO P AGTT L AAGT V	M TGC A TCT L AGG G TCCT L	CGA E GTT F AGT V GGT V	CAA K GAA K	GTCG S 110 CTGG C 170 AGTTA L 230 AGAGA R 290 AAATA I 350 ITCA	V CCCA P AAG S ATG C ATT L	C AGC' A TCT L CACC T GAA' K	TCTT L TGCC A GGAT D GAAA K

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			10						3	0				•		50			
ACGAGCTGCCACGCACGACTGAACACAGACAGCAGCCGCCTCGCCATGAAGCTGCTGATG																			
															M	K	L	L	M
			70						9	-						110			
CTCCTCATGCTGGCGGCCCTCCTCCTGCACTGCTATGCAGATTCTGGCTGCAAACTCCT											CCTG								
٧	L	М	L	Α	Α	L	L	L	Н	C	Υ	Α	D	S	G	C	K	L	L
		1	30						15	0						170			
GA	GAGGACATGGTTGAAAAGACCATCAATTCCGACATATCTATACCTGAATACAAAGAGCTT												GCTT						
Ε	D	M	٧	Ε	K	T	I	N	S	D	l	S	I	Р	Ε	Y	K	E	L
		1	90						21	0						230			
CT	TCA	AG/	GTI	CAT	AGA	CAG	STGA	TGC	CGC	TGC	AGA	GGC	TAT	GGG	GA/	ATT	CAA	GCA	GTGT
L	Q	Ε	F	I	D	S	D	Α	Α	Α	Ε	Α	М	G	K	F	K	Q	С
		2	250						27	0						290			
TT	CCT	CAA	ACC#	IGT C	CACA	ATAC	SAAC	CTCT	GAA	AAA	CTT	TGG	ACT	GAT	GA1	GCA	TAC	AGT	GTAC
F	L	N	Q	S	Н	R	T	L	K	N	F	G	L	М	М	Н	T	٧	Υ
		3	310						33	0						350			
GA	CAC	CAT	TTC	GTO	TAA	\TA1	[GA#	GAG	AAT	ATT	VACT	TTA	CCC	AAG	GCC	TTT	GGC	TCA	GAGG
	D	S	Ī	W	C	N	М	K	S	N	*								
			370						39	0						410			
GC	TAC	CAGA	\CT/	ATGO	CCA	\GA/	ACTO	CATC	CTGT	TGA	ATTG	CTA	GAA	ACC	AC1	TTTC	TTC	TTG	TGTT
		4	130				-		45	0						470			
GCTTTTTATGTGGGAACTGCTAGACAACTGTTGAAACCTCAATTCATTC																			
	FIG 3																		

50 NPPPEALAAKLEVKHCTDQISFKKRLSLEKVLVEIVKKCGV 90 |:||.|:.||||:|..||:|...|| 53 nappaaveaklevkrcvdqmsngdrlvvaetlvyiflecgv 93

FIG.4

MKLSVCLLLVTLALCCYQANA.EFCPALVSELLDFFFISEPLFKLSLAKF : : : : : : : :	
 DAPPEAVAAKLGVKRCTDQMSLQKRSLIAEVLVKILKKCSV 90 : . . : . :: . : . : nappaaveaklevkrcvdqmsngdrlvvaetlvyifleagv 93	

FIG.5

1	MKLLMVLMLAALLLHCYA.DSGCKLLEDMVEKTINSDISIPEYKELLQEF	49
1	::::: :: : .: :::: .:.:: :: mklvflfllvtipiccyasgsgcsildevirgtinstvtlhdymklvkpy	5
	IDSDAAAEAMGKFKQCFLNQSHRTLKNFGLMMHTVYDSIWCNMKSN 95	
	::]: . : : :: .	
1	vgahftekavkqfkqcfldqtdktlenvgvmmeaifnsescqqps. 95	

FIG.6





